NTCA
NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION
The Voice of Rural Telecommunications
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December 10, 2009

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

***Ex Parte* Notice**

In the Matter of Impact of Middle and Second Mile Access on Broadband Availability and Deployment, NBP Public Notice #11, GN Docket Nos. 09-47, 09-51, 09-137

In the Matter of the Role of the Universal Service Fund and Intercarrier Compensation I the National Broadband Plan, NBP Public Notice #19, GN Docket Nos. 09-47, 09-51, 09-137

In the Matter of Rural Health Care Support Mechanism, NBP Public Notice #17, GN Docket Nos. 09-47, 09-51, 09-137; WC Docket No. 02-60

Dear Ms. Dortch:

On Wednesday, December 9, 2009, Daniel Mitchell, Scott Reiter and Karlen Reed with the National Telecommunications Cooperative Association (NTCA), met with Carol Mattey, Thomas Koutsky, Alex Menard, Amy Bender, Phoebe Yang, Thor Kendall, Katie King, and Rebekah Goodheart of the Commission's National Broadband Task Force and the Wireline Competition Bureau.

We discussed issues raised in NTCA's attached November 20, 2009 ex parte filing regarding the cost and availability of middle and second mile transport services, including NTCA's data request to its members. NTCA staff explained that the data presented in its filing demonstrate that as Internet speeds increase, middle mile costs will become an increasing proportion of the cost of providing Internet Access Service. NTCA's filing also showed that rural providers experience costs for middle-mile and second-mile transport that area much higher than large providers and will require some form of high-cost universal service support to respond to increasing customer demand.

We discussed briefly NTCA's new 2009 Broadband/Internet Availability Survey Report and distributed copies. A copy of this report is attached to this filing. We also discussed the merits of extending and expanding the FCC's rural health care pilot program beyond its June 30, 2010 expiration date and distributed copies of the attached NTCA March 16, 2009 filing on this matter. NTCA urged the Commission to expand and make permanent the pilot program, noting

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that the program benefits rural health care providers, patients and their communities. NTCA recommended that the Commission expand and make the pilot program permanent, plus make several changes to the pilot program structure: 1) make sure future applicants are advised of all sustainability requirements before applications are due; 2) allow rural telcos to provide the 15% matching funds for rural health care networks' applications to help sustain the projects; 3) permit pilot program funds to be used for administrative expenses and program management fees; and 4) enhance sustainability of pilot program projects by permitting program recipients to use excess capacity for non-healthcare purposes and apply revenues gained from the excess capacity to sustain the projects.

The discussions were consistent with NTCA's positions in previously filed comments and pleadings in the above-referenced dockets. Copies of the above-referenced comments, pleadings and filings are attached for convenience.

Pursuant to Section 1.1206 of the Commission's rules, a copy of this letter is being filed via ECFS with your office. If you have any questions, please do not hesitate to contact me at (703) 351-2146.

Sincerely,

/s/ Karlen Reed
Karlen Reed
Regulatory Counsel, Legal and Industry

KR: rhb
Encls. (3)

cc: Carol Mattey
Thomas Koutsky
Alex Menard
Amy Bender
Phoebe Yang
Thor Kendall
Katie King
Rebekah Goodheart

NTCA
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November 20, 2009

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W., TW-A325
Washington, D.C. 20554

***Ex Parte* Notice**

***In the Matter of Comment Sought on the Impact of Middle and Second Mile Access on Broadband Availability and Deployment,* NBP Public Notice # 11, GN Docket Nos. 09-47, 09-51, 09-137**

Dear Ms. Dortch:

The National Telecommunications Cooperative Association (NTCA) files the attached *ex parte* Comments in response to the Commission's October 8, 2009 Public Notice (NBP Notice #11) seeking further information in order to understand more fully the cost and availability of middle and second mile transport services and how they relate to making broadband available to all Americans. In the comments, NTCA examines the Commission's proposed framework delineating middle mile, 2nd mile, and last mile and concludes that it does not precisely comport to the reality faced by rural carriers. NTCA urges the Commission to recognize that ubiquitous broadband deployment will require some form of middle mile cost recovery for rural providers. NTCA includes results from a recent data request of its membership that indicates that middle mile costs will rise dramatically as bandwidth demand increases.

In accordance with the Commission's rules, this letter is being electronically filed with the Secretary's Office. If you have any questions, please do not hesitate to contact me at 703-351-2016.

Sincerely,
/s/ Daniel Mitchell
Daniel Mitchell
Vice President, Legal and Industry

DM/rjs

Attachment: NTCA *Ex Parte* Comments on NBP Notice #11

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Comment Sought on Impact of Middle and	)	GN Docket Nos. 09-47, 09-51, 09-137
Second Mile Access on Broadband	)	
Availability and Deployment	)	

COMMENTS ON NBP NOTICE #11

The National Telecommunications Cooperative Association (NTCA)[1] hereby submits these comments in response to the Federal Communications Commission's (Commission or FCC) October 8, 2009 Public Notice seeking further information in order to understand more fully the cost and availability of middle and second mile transport services and how they relate to making broadband available to all Americans.[2]

[1] NTCA is a premier industry association representing rural telecommunications providers. Established in 1954 by eight rural telephone companies, today NTCA represents more than 585 rural rate-of-return regulated telecommunications providers. All of NTCA's members are full service rural local exchange carriers (LECs) and many of its members provide wireless, cable, Internet, satellite and long distance services to their communities. Each member is a "rural telephone company" as defined in the Communications Act of 1934, as amended (Act). NTCA's members are dedicated to providing competitive modern telecommunications services and ensuring the economic future of their rural communities.

[2] *Comment Sought on Impact of Middle and Second Mile Access on Broadband Availability and Deployment, NBP Public Notice #11*, GN Docket Nos. 09-47, 09-51, 09-137, Public Notice (Notice), (released on October 8, 2009).

I. INTRODUCTION

In order to better understand the challenges their members face in obtaining transport to the Internet backbone, NTCA in late October issued a data request to their members. The data request was conducted electronically, and an email message containing the data request's URL was sent to NTCA member company managers. NTCA compiled data from 162 unique responses from its member companies. All data was collected with the explicit understanding that only aggregated results would be published.

II. THE COMMMISSION'S NETWORK ARCHITECTURE AS PROPOSED IN THE PUBLIC NOTICE DOES NOT COMPORT WITH THE REALITIES OF RURAL CARRIERS.

In the Notice, the Commission offers a diagram that conceptually illustrates their delineation of middle mile, 2nd mile, and last mile.[3] In the diagram, the Commission imposes their framework upon three distinctly different networks: telephone (copper or fiber), cable (coax or fiber), and mobile wireless.

While the Commission's intent in developing this framework was to impose a common delineation across platforms the unfortunate reality is that network architectures are different. NTCA does not believe that the dichotomy used in the *Notice* comports with the way the network is planned or tracked. NTCA recognizes that it is convenient to assign common terms for all to use, but disagrees with the assignment used in the notice. NTCA's remarks are limited to the incumbent local exchange carrier (ILEC) network relative to the mobile wireless network. No representation is made relative to the best framework for cable.

[3] *Notice*, p. 2.

According to the Commission's chart, the last mile for an ILEC is comprised of the connection between the customer premise and the remote terminal/fiber splitter (for a copper or fiber network); the 2nd mile the connection between that point and the central office; and the middle mile the connection between the central office and the Internet gateway. However, ILECs consider the last mile to be exchange line facilities and to encompass everything from the customer premises to the central office, also known as the serving wire center (SWC). The concept of using a remote terminal or fiber splitter as the first point of concentration to differentiate between last mile and second mile is at odds with normal ILEC operations. The SWC is the logical demarcation between last mile and second mile. Using this classification all loop plant is last mile and all transport among central offices in a study area to aggregate all Internet traffic is second mile. For ILECs, last mile and second mile facilities are usually self-provisioned. On the other hand, the middle mile begins at the Internet aggregation point and ends at the Internet gateway. The middle mile facility is usually secured from a third party.

The National Exchange Carrier Association, in their comments on NBP Notice #11, note that "[s]mall rural telephone companies often use concentrator equipment in the last mile…to aggregate traffic and reduce costs. To avoid confusion between 'last mile' and 'second mile' facilities and conform with current rural rate-of-return cost classification rules, NECA…considers second mile facilities as 'transport from the serving wire center end office to the ISP premises.'"[4] NTCA agrees with NECA.

NTCA agrees with the last mile, second mile, middle mile dichotomy in the *Notice* for mobile wireless. The last mile is the wireless leg from a cellphone to the cell tower. The second mile, which is commonly called backhaul, extends from the cell site to the mobile switching

[4] Comments of NECA, p. 2.

center. For the wireless provider, backhaul is commonly procured via a local exchange carrier and backhaul facilities are used to aggregate traffic at the mobile switching center which is usually located in a point outside the service area of a rural ILEC. This is significantly different from an ILEC which typically self-provisions the second mile. Another major difference is the geographic scope of the LEC service area versus the mobile wireless provider's serving area. In general, wireless licenses encompass a much larger serving area than an ILEC and wireless second mile networks will be extensive.

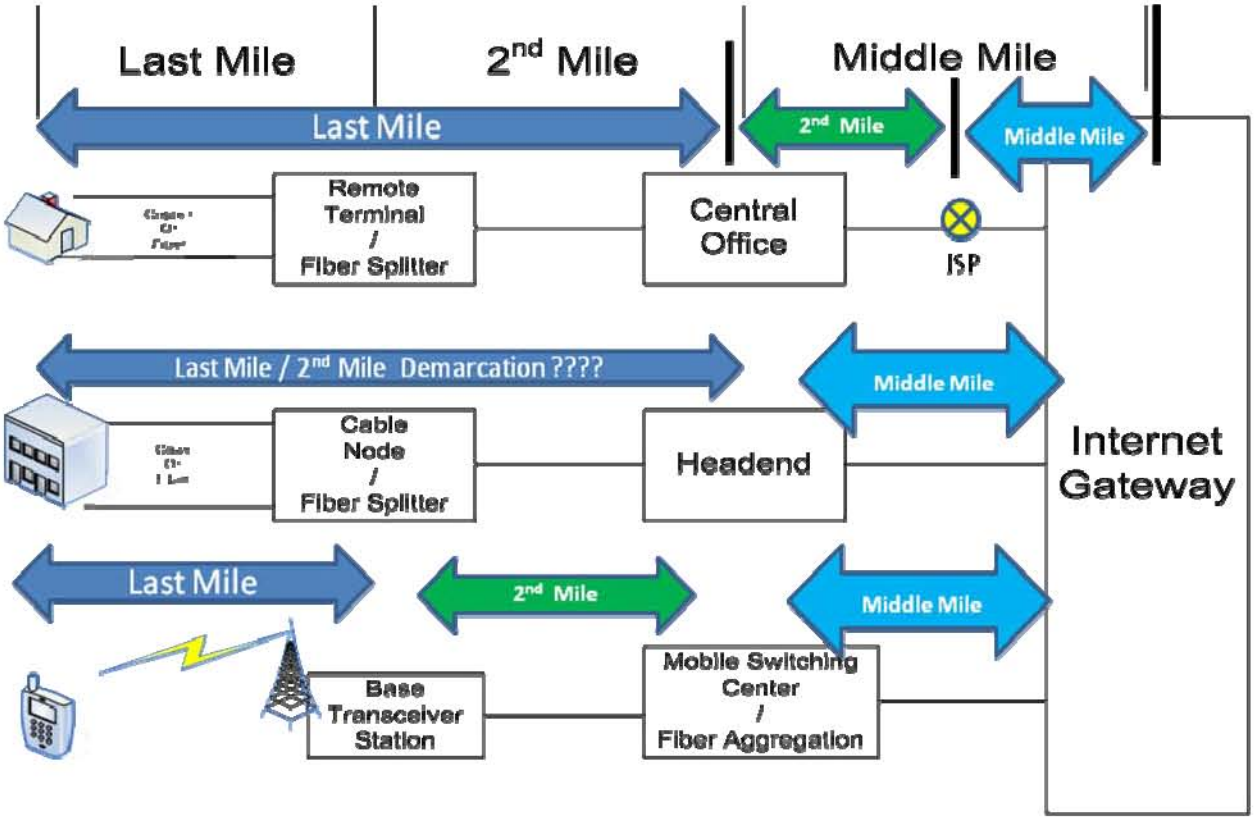

Figure on page 2, FCC: DA 09-2186, GN Docket Nos. 09-47, 09-51, 09-137, COMMENT SOUGHT ON IMPACT OF MIDDLE AND SECOND MILE ACCESS ON BROADBAND AVAILABILITY AND DEPLOYMENT, NBP Public Notice # 11

In these comments NTCA provides data for rural ILEC middle mile costs from the ILEC Internet aggregation point to the Internet gateway. We do not include any second mile information.

III. IF THE COMMISSION TRULY WISHES TO MEET ITS STATED GOAL OF UBIQUITOUS BROADBAND DEPLOYMENT, SOME FORM OF MIDDLE MILE COST RECOVERY FOR RURAL PROVIDERS WILL BE ESSENTIAL.

If the Commission truly wishes to achieve its stated goal of universal affordable broadband service for all Americans, it will be necessary to ensure that rural providers are able to recover the costs associated with access to middle mile transport services. Many of the respondents to the NTCA Middle Mile Data Request indicated just how important the issue of competitively-priced middle mile access was to them. For example:

> "The cost for backbone connectivity is a real problem for the rural companies."
>
> "With the demand for bandwidth increasing as such an amazing rate there must be some mechanism put into place to help with the rising cost."
>
> "Once over-the-top video becomes well established, Internet backbone connectivity cost will break the backs of rural providers and will have a major negative impact on all providers."
>
> "Cost of middle mile connectivity forces rural ILECs to provide needed customer broadband at a loss to the provider."

As illustrated in the following section, the quantitative responses to NTCA's data request indicate that the problems noted here by NTCA member companies will grow dramatically worse as consumer demand for broadband continues to grow.

IV. NTCA'S DATA REQUEST INDICATES THAT MIDDLE MILE COSTS WILL RISE DRAMATICALLY AS BANDWIDTH DEMAND INCREASES.

The one truly outstanding conclusion from the data request is that total middle mile cost will rise as Internet demand increases. A scatter diagram plotted on a logarithmic scale reveals a clear relationship between the size of a middle mile connection and the cost per Mbps.

An initial plot of data points (Figure 1) indicates that bigger connections are less expensive in cost per Mbps terms, but the relationship between cost and size of connection was

not readily apparent.

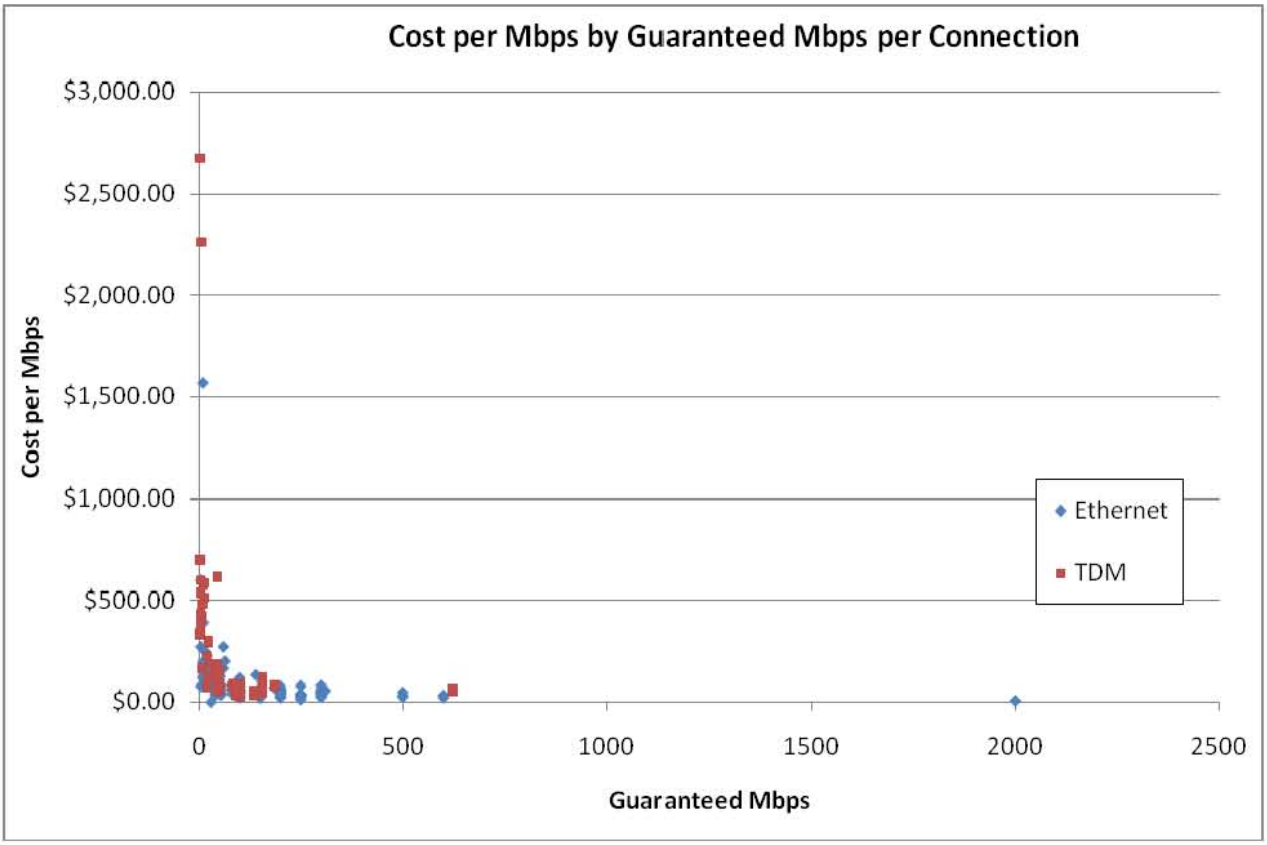

Figure 1

Figure 2, which is a chart of the same data with the vertical and horizontal scales reduced to focus on the bulk of the data points, is equally unrevealing. However, when the data is graphed on a logarithmic scale (Figure 3), the relationship between cost and size of connection is readily apparent.[5]

[5] Plotting data points on a logarithmic scale is a particularly useful tool for identifying relationships when there is a relatively large range in data points—such as in this case, where the data extends across several orders of magnitude.

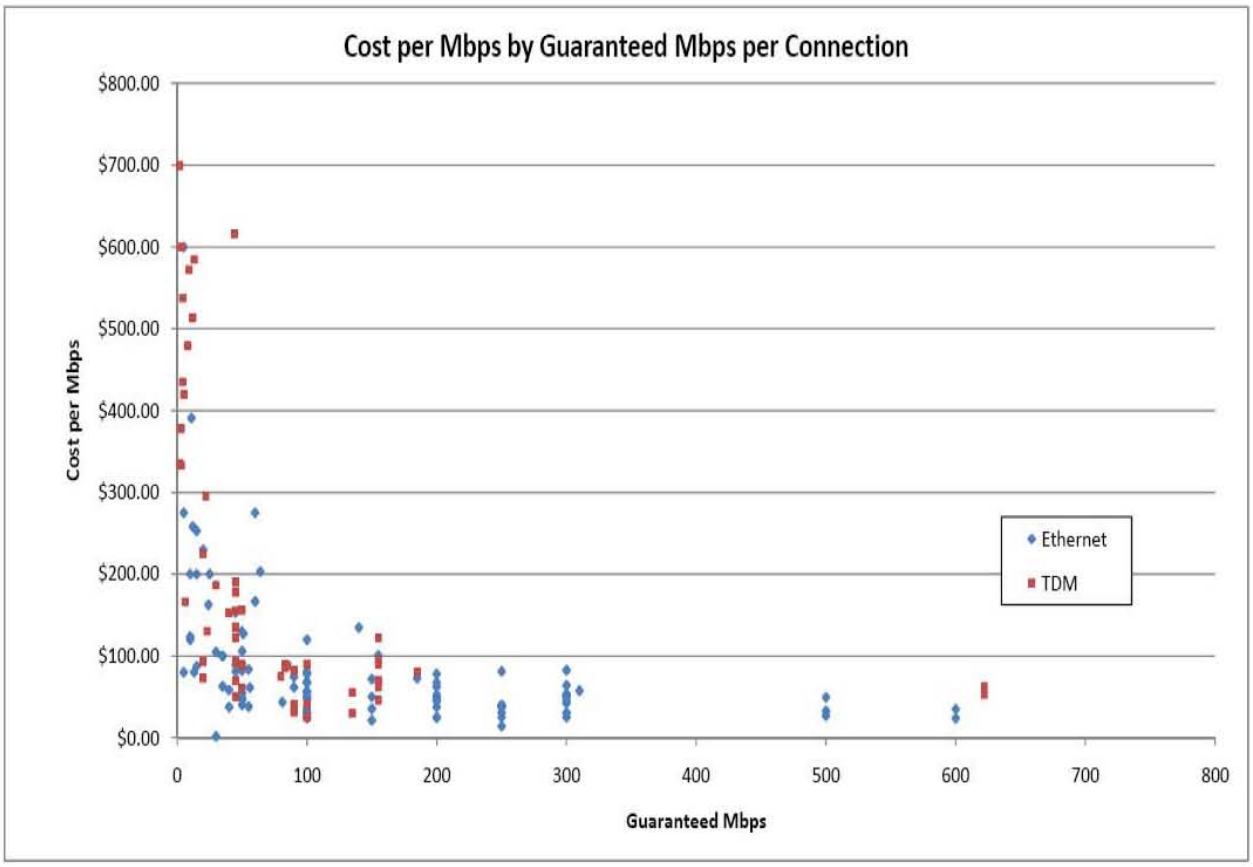

Figure 2

Figure 3 reveals that cost per Mbps is significantly lower when the size of the connection is significantly larger. The data shows that if size increases by orders of magnitude, then cost per Mbps drop by a predictable amount. For instance, for 10 Mbps connection the cost per Mbps varied from $120 to $1,570 while at 100 Mbps the low was $25 and the high was $120. The trend is clear at a macro level, while at the micro level there is a wide amount of variability in the cost of a specific connection of a given size. NTCA notes that the variability in cost for a given size is a common characteristic of telecommunications costs. This variability is the norm for rural ILECs. There are many reasons for such variability and attempts to model rural costs with specific algorithmns has been unsuccessful. At a macro level there is a clear relationship, but for predicting the cost of a specific operation we find a high degree of variablity. Thus, we can

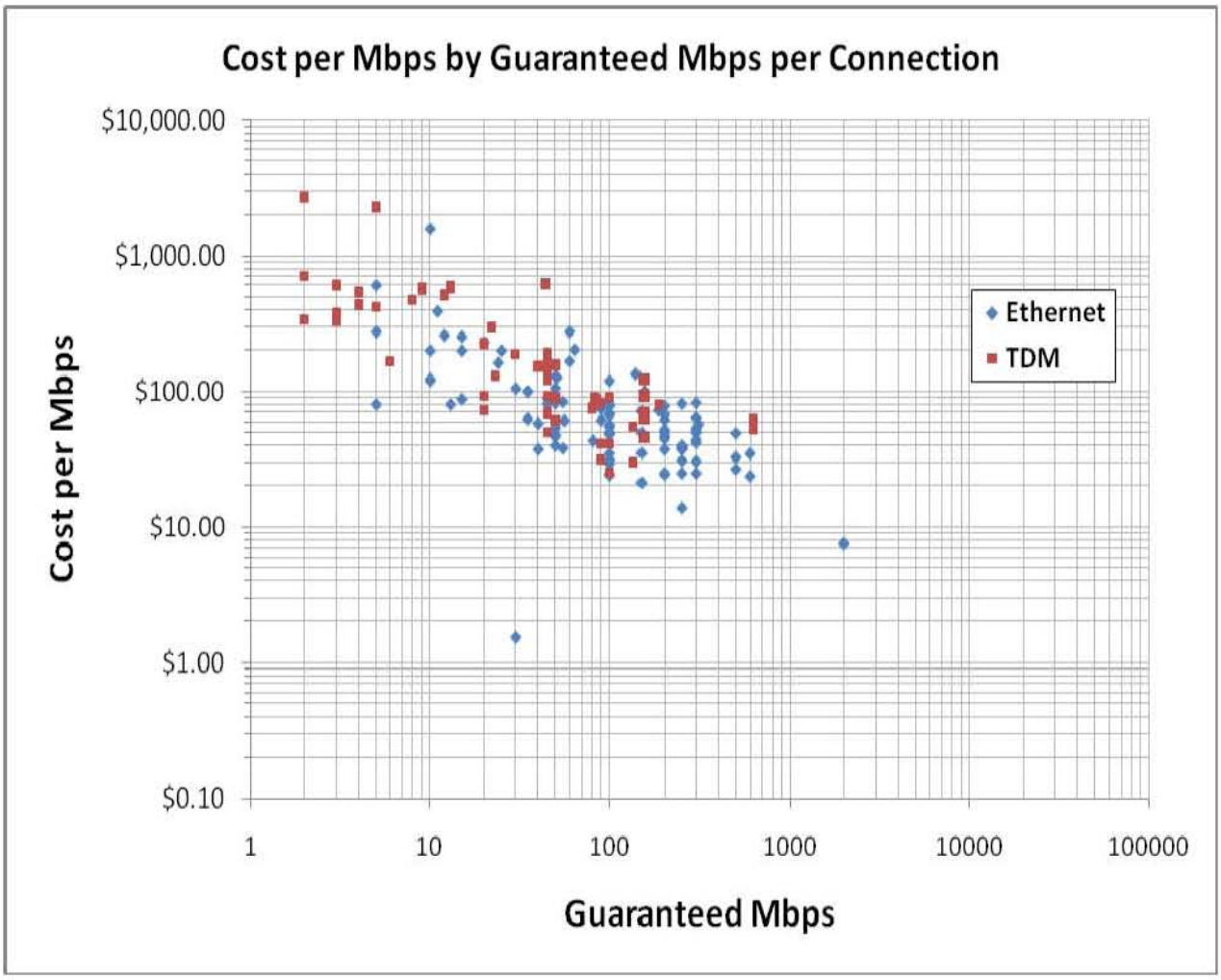

Figure 3

safely say that companies with connections of 1,000 Mbps pay much less per Mbps than companies with 10 Mbps connections. Yet it is possible that the lowest cost 10 Mbps connection will not be much greater than the highest cost 1,000 Mbps connection. One takeaway from this is that large providers operate at much lower cost per Mbps than small companies.

The average provider responding to NTCA's survey has 3,986 high speed subscribers and has a 132 Mbps middle mile connection and pays $57.97 per Mbps with a total cost of $7,652. The average cost per subscriber per month is $1.88 or in round numbers approximately $2.00. This includes both TDM and Ethernet connections. Data compiled from the request shows that

TDM is more expensive per Mbps than Ethernet. Average cost per Mbps for TDM was $90.80 and for Ethernet was $48.55. The charts in Figures 1, 2 and 3, shown above, show that as higher capacity connections are required, Ethernet becomes the preferred type of transport. Unfortunately, Ethernet connections are not always available. Undoubtedly, the demands of the market will move all transmission toward Ethernet. The Commission should encourage middle mile providers to make cost effective Ethernet facilities available for all middle mile connections.

The National Exchange Carrier Association (NECA) filed comments in this proceeding on November 4, 2009. Table 1 of NECA's filing contains data collected by NECA pursuant to NECA's 2009 Company Service Questionaire and NECA settlement data. As a check against the data, NTCA collected data points were plotted for Ethernet connections for each band on the table: under 10 Mbps, 10 to 50 Mbps, 50 to 100 Mbps, 100 to 1000 Mbps and over 1000 Mbps. Figure 4, below, captures these data points. They all fall well within the range of data collected separately by NTCA.

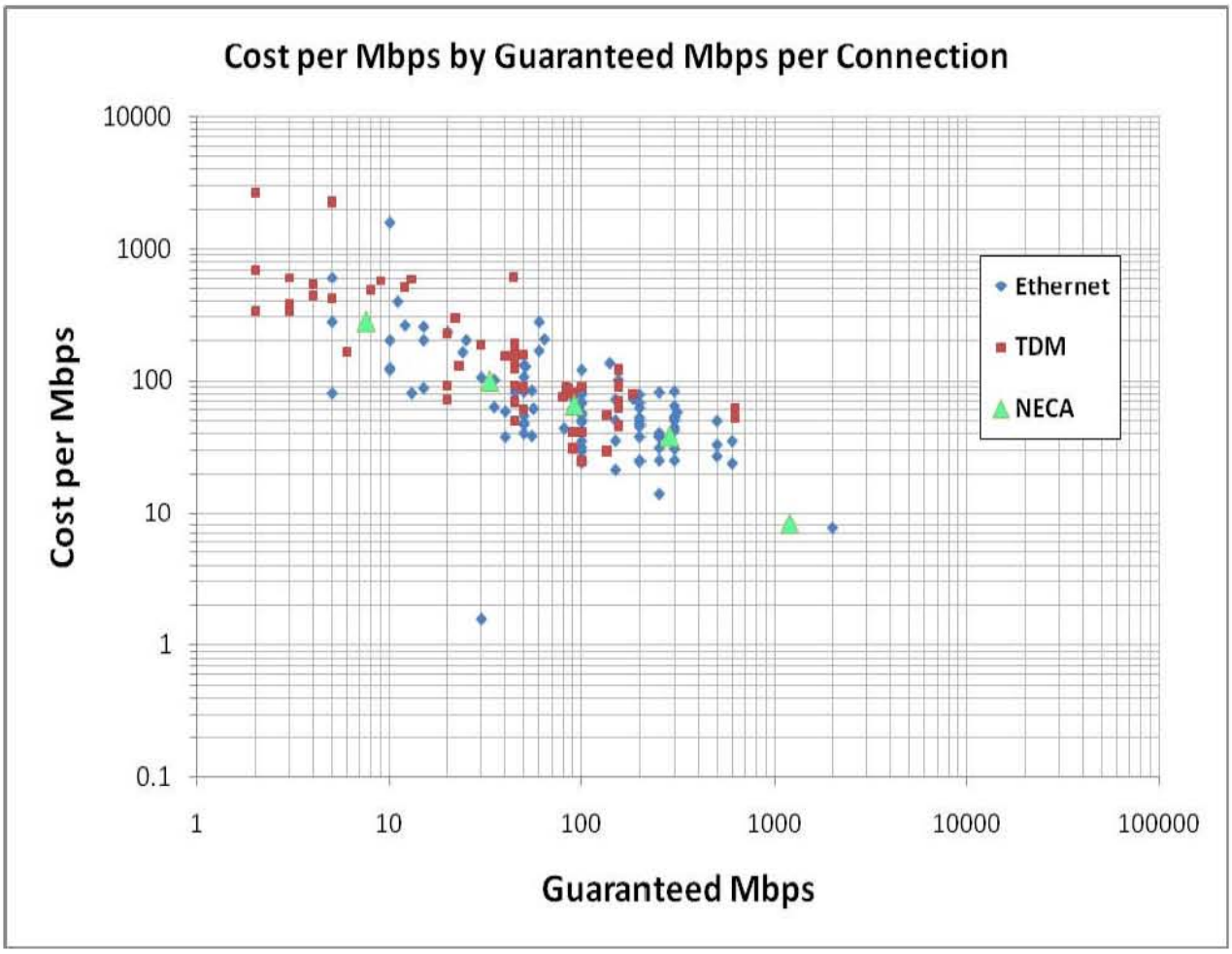

Figure 4

For purposes of considering the implications of this data, a line was drawn through the first and last data points from the NECA data are shown below in Figure 5. While this line is not necessarily a good predictor of cost per Mbps for any specific connection, it is a fair representation of the underlying cost/volume relationship over very large range in size.

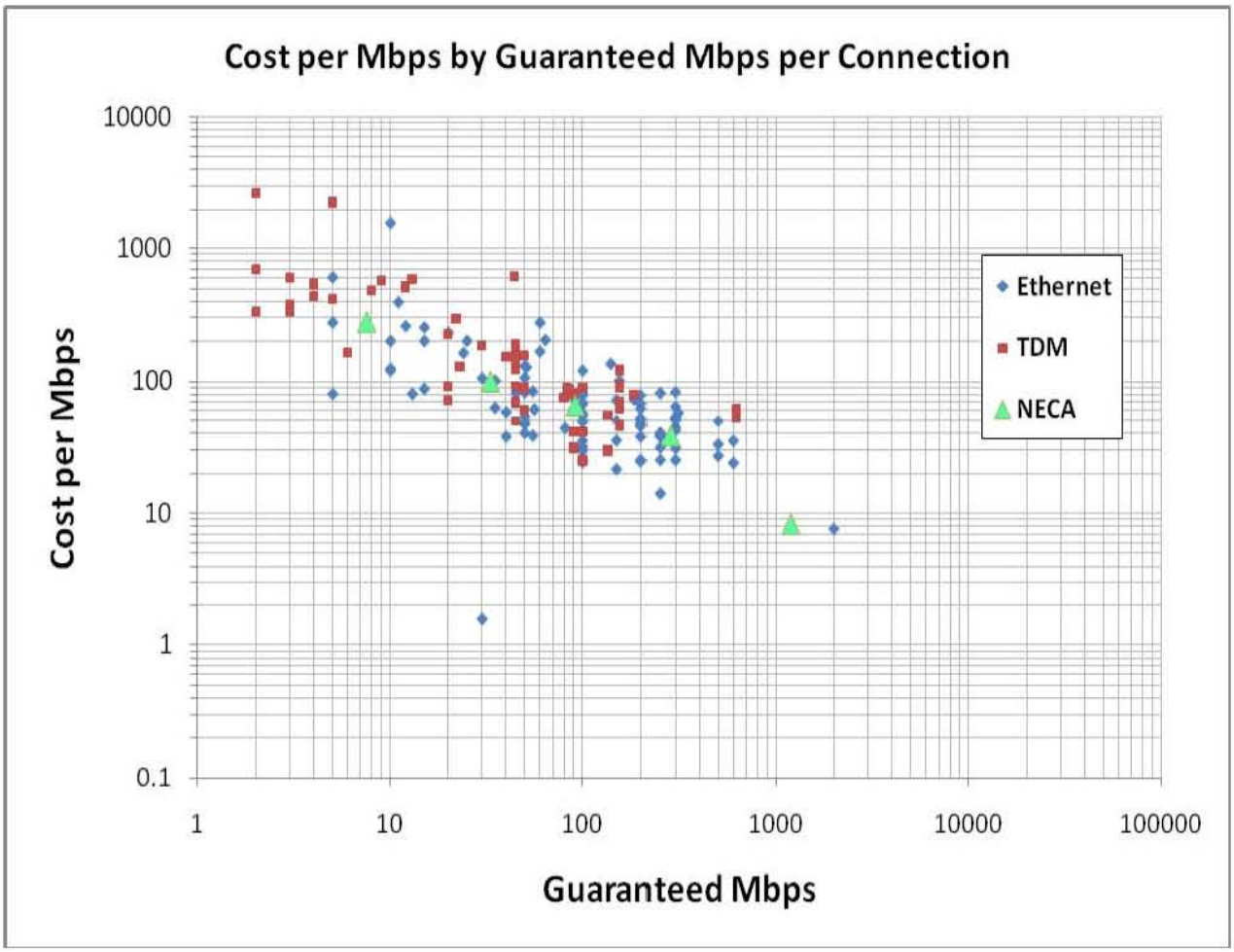

Figure 5

The dotted line strongly implies that large carriers, such as RBOCs, operating in major population centers enjoy vast economies of scale that cannot be matched by rural carriers serving small populations covering large land areas. In total, NTCA members, nearly 585 companies, average about 6500 lines versus Verizon and AT&T with 45,000,000 and 65,000,000 lines, respectively. Thus AT&T is 10,000 times bigger than the average NTCA member, that 10^4 or four orders of magnitude or the difference between operating at 10 Mbps or 100,000 Mbps. Middle mile prices at 10 Mbps are about $200 per Mbps and are approximately $0.40 at 100,000 Mbps. These numbers are illustrative of the type of cost differences that are real given vast

differences in scale. The implications are enormous, and the Commission needs to carefully consider what this means.

For instance, if one uses the underlying relationship between cost per Mbps and size of middle mile connection, middle mile cost will rise dramatically as consumers are offered much faster last mile connections. If usage per subscriber goes from 1Mbps to 100 Mbps with all else held constant (no new subscribers and no additional revenue) middle mile costs will rise. If we assume that a 2 order of magnitude increase in consumer capacity translates into a 2 order of magnitude increase in the amount of middle mile capacity, we can estimate the impact of this increase on total middle mile cost.

Using the NECA data points we estimate that the average cost per Mbps decreases approximate 78.34 % for each order of magnitude increase in size. The following table captures the effect:

Size of Middle Mile Connection Mbps	Cost per Mbps	Total Middle Mile Cost
1	$1,050.00	$1,050.00
10	$227.46	$2,274.60
100	$49.27	$4,927.43
1,000	$10.67	$10,674.21
10,000	$2.31	$23,123.38
100,000	$0.50	$50,091.82

For simplicity and illustrative purposes let's say capacity increases from 100 Mbps to 10,000 Mbps (2 orders of magnitude). The cost per Mbps then drops from $49.27 to $2.31, yet the total cost will increase from $4927.43 to $23,123.38--an increase of 369%. This means that the cost of just the middle mile would go from approximately $2.00 per subscriber to $9.38. Data from respondents indicates that cost variance around a specific connection size are large,

perhaps as much as an order of magnitude, which suggests that at 100 Mbps a per subscriber cost ranging from $5.00 to $50.00 may be anticipated. It is logical to assume that similar cost increases will be experienced in the Second Mile to aggregate the Internet traffic from SWC to the Internet access provider's aggregation server.

Based on the above analysis, NTCA asserts the following:

1. As Internet speeds increase, middle mile costs will become an increasing proportion of the cost of providing Internet Access service.

2. Rural providers experience costs that are much higher than the large providers. In other words, the economies of scale realized by the largest providers are real and permit large carriers to have middle mile costs that are probably 2 or more orders of magnitude below rural those of providers.[6]

The results of the data request make it readily apparent that small carriers will require some form of high cost universal service support for middle mile and second mile costs in response to increased consumer demand. Absent such support, it will be virtually impossible for small carriers to provide broadband at rates comparable to those offered by the large providers in non-rural areas. In determining future broadband USF requirements, it will be critical that the Commission take rural carriers' growing middle mile and second mile access costs into consideration and allow these providers a means of recovering their costs.

V. CONCLUSIONS

Based on the preceding, NTCA requests that the Commission recognize that ubiquitous broadband deployment will require some form of middle mile cost recovery for rural providers. As the results of NTCA's data request indicate, middle mile costs will rise dramatically as future

[6] It is interesting to note that this is not inconsistent with the Intercarrier Compensation proceeding with NECA access rates of approximately $0.02 versus unified access rates of $0.0007.

bandwidth demand increases. In achieving the goal of ubiquitous broadband deployment and rate comparability, it will therefore be critically important that the Commission take the necessary steps to ensure that rural broadband providers are able to recover the costs associated with access to middle mile and second mile transport services.

Respectfully submitted,

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By: /s/ Daniel Mitchell
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November 20, 2009

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NTCA 2009 BROADBAND/INTERNET AVAILABILITY SURVEY REPORT

November 2009

DISCLAIMER: Data from the survey has been presented as reported.

To get more information on this report please contact Rick Schadelbauer at NTCA (703-351-2019, richards@ntca.org) or Scott Reiter at NTCA (703-351-2015, sreiter@ntca.org).

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EXECUTIVE SUMMARY

For the last eleven years, the National Telecommunications Cooperative Association (NTCA) has conducted its annual Broadband/Internet Availability Survey to gauge the deployment rates of advanced services by its member companies.[1] In the late spring and early summer of 2009, NTCA sent an electronic survey form to each of the companies in NTCA's email database; 156 members (31%) responded.

Ninety-eight percent of the 2009 survey respondents offer broadband to some part of their customer base, compared to the 58% of the 2000 survey respondents who offered the then-lower definition of broadband service.[2] Respondents indicated that they use a variety of technologies to provide broadband to their customers: 98% of those who offer broadband utilize digital subscriber line (DSL), 59% fiber to the home (FTTH) or fiber to the curb (FTTC) (up from 44% last year and 32% the year before that), 25% licensed wireless, 22% unlicensed wireless, 15% satellite and 10% cable modem. Only 29% of 1999 survey respondents offered DSL service, and none offered wireless broadband.

Seventy-eight percent of respondents' customers can receive 200 to 768 kilobits per second (kbps) service, 73% 768 kbps to 1.5 megabits per second (Mbps), 77% 1.5 Mbps to 3 Mbps, 53% 3 Mbps to 6 Mbps, and 39% greater than 6 Mbps. The overall take rate for broadband service is 37%.[3] On average, 23% of respondents' customers who can receive 200 kbps to 768 kbps service subscribe, 19% subscribe to 768 kbps to 1.5 Mbps service, 21% to 1.5 Mbps to 3 Mbps, 22% to 3 Mpbs to 6 Mbps offerings, and 10% to greater than 6 Mbps service.

The typical respondent is 103 miles from their primary Internet connection. Eighty-five percent of those who recently changed backbone providers did so for price reasons. Seventy-two percent of respondents indicated they are generally satisfied with their current backbone access provider, while 20% are generally dissatisfied.

Eighty-nine percent of survey respondents indicated they face competition in the provision of advanced services from at least one other service provider in some portion of their service area. By comparison, only 66% of respondents to the 2003 survey indicated

[1] Following the completion of the 2001 survey in December 2001, it was decided that subsequent Broadband/Internet Availability Surveys would be conducted in the first half of the year in order to capture year-end data. Consequently, no survey was conducted and no survey report published in calendar year 2002.
[2] For the purpose of this survey, broadband is defined as throughput of at least 768 kbps in one direction. Previously, the Commission had defined broadband as service of at least 200 kbps in one direction.
[3] Actual rural broadband subscription rates are likely significantly higher than the numbers shown here, as survey respondents are joined by a variety of competitors in the provision of broadband services within their service area.

they faced competition and only 43% in the 1999 survey. Current competitors include national Internet service providers (ISPs), cable companies and wireless Internet service providers (WISPs). Respondents are taking numerous marketing steps to increase broadband take rates, including free customer premise equipment installation, bundling of services, price promotions, free hardware, free introductory service and free software.

More than three-quarters of respondents find it difficult to compete with price promotions offered by competitors. Overall, 37% of survey respondents consider their company's marketing efforts to be "very successful."

Seventy-three percent of those respondents with a fiber deployment strategy plan to offer fiber to the node to more than 75% of their customers by year-end 2011, while 55% plan to offer fiber to the home to at least 50% of their customers over the same time frame, up from 26% last year. Deployment cost remains the most significant barrier to wide deployment of fiber, followed by regulatory uncertainty, long loops, low customer demand, and obtaining cost-effective equipment. Throughout the history of the survey, deployment cost has been respondents' most significant concern.

Ten percent of respondents currently offer voice over Internet protocol (VoIP) service, up slightly from 6% last year. Fifty-four percent of respondents have plans to offer VoIP in the foreseeable future, up from 44%. Seventy-five percent of respondents offer video service to their customers, up from 68% last year.

INTRODUCTION

In the summer of 2009, NTCA surveyed its members on their activities in the areas of providing broadband services and Internet availability to their members/customers. NTCA is a national association of more than 580 local exchange carriers in 44 states that provide service primarily in rural areas. All NTCA members are small carriers that are "rural telephone companies" as defined in the Telecommunications Act of 1996 ("Act"). Only four NTCA member companies serve 50,000 lines or more; the largest serves just over 90,000. Population density in most member service areas is in the 1 to 5 customers per square mile range. Approximately half of NTCA's members are organized as cooperatives and the other half are commercial companies.

This latest broadband survey is a follow-up to similar surveys conducted in recent years by NTCA, and seeks to build upon the results of those surveys.[4] This year's survey asked about technologies used to provide broadband service, broadband availability and subscription rates, prices charged, quantity and type of competition, broadband marketing

[4] Copies of this and previous NTCA survey reports may be downloaded from the NTCA Web site, www.ntca.org.

efforts, fiber deployment, emerging technologies, Internet backbone connections, finance and availability of capital. The survey also provided an opportunity for respondents to provide any specific comments they wished to share.

OVERVIEW OF SURVEY

The 2009 NTCA Broadband/Internet Availability Survey was conducted online. The survey was broken up into two separate segments, each sent out about three weeks apart. Member companies were provided with a URL through which they could access each portion of the survey. Every effort was made to minimize the reporting burden on the survey respondents.

The first part of the survey was comprised of general questions about the respondent's current operations, competition/marketing and current and planned fiber deployment. The second part dealt with the Internet backbone, voice over Internet protocol (VoIP) and video. The first part also contained an opportunity for respondents to offer any miscellaneous thoughts.

SURVEY RESULTS

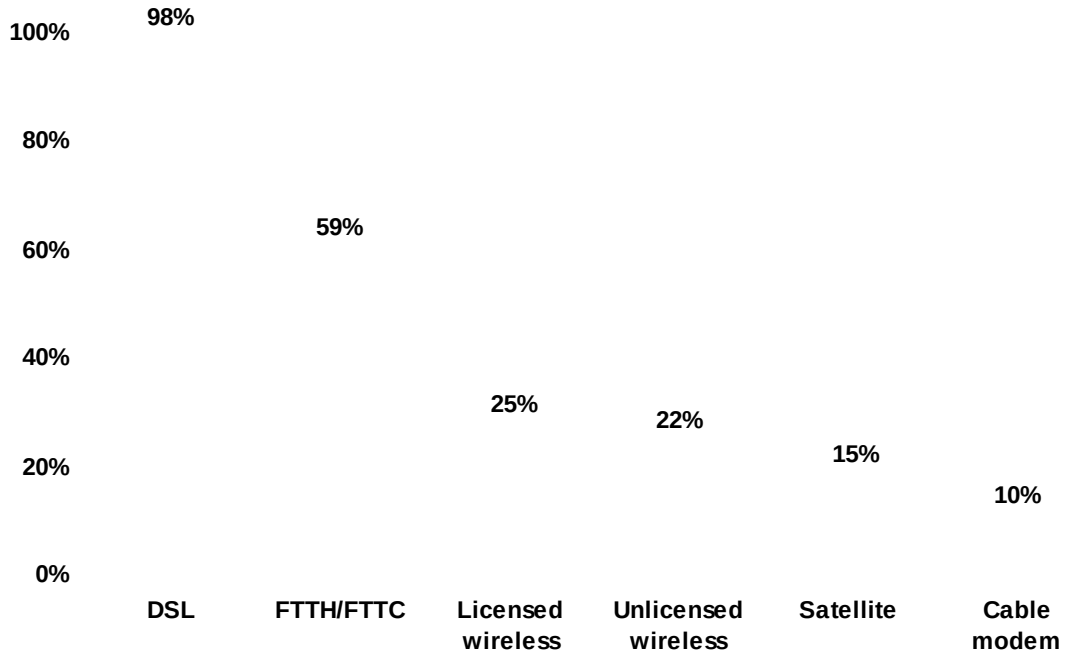
The survey URL for each part of the survey was distributed via e-mail to all member companies in NTCA's email database. The message contained instructions for online access to the survey. Responses were received from 156 member companies, a 31% response rate.[5]

Fifty-six percent of survey respondents' service areas are 500 square miles or larger; 27% are at least 2000 square miles. Two-thirds—67%—have customer densities in their service area of 10 residential customers per square mile or less. Nearly one-third—31%—have customer densities of 2 residential customers per square mile or less.

[5] Based on the sample size, results of this survey can be assumed to be accurate to within ± 6.5% at the 95% confidence level.

The average survey respondent serves 5,375 residential and 1,655 business lines; a few larger companies skew these numbers upward, hence the median respondent serves 3,020 residential and 700 business lines. Ninety-eight percent of survey respondents offer broadband[6] service to some part of their customer base. Respondents indicated that they use a variety of technologies to serve their customers: 98% utilize digital subscriber line (DSL), 59% fiber to the home (FTTH) or fiber to the curb (FTTC), 25% licensed wireless, 22% unlicensed wireless, 15% satellite, and 10% cable modem.[7] (See Figure 1.) Fiber deployment is up from 44% in the 2008 survey and 32% in 2007.

Fig. 1: TECHNOLOGIES USED TO PROVIDE BROADBAND



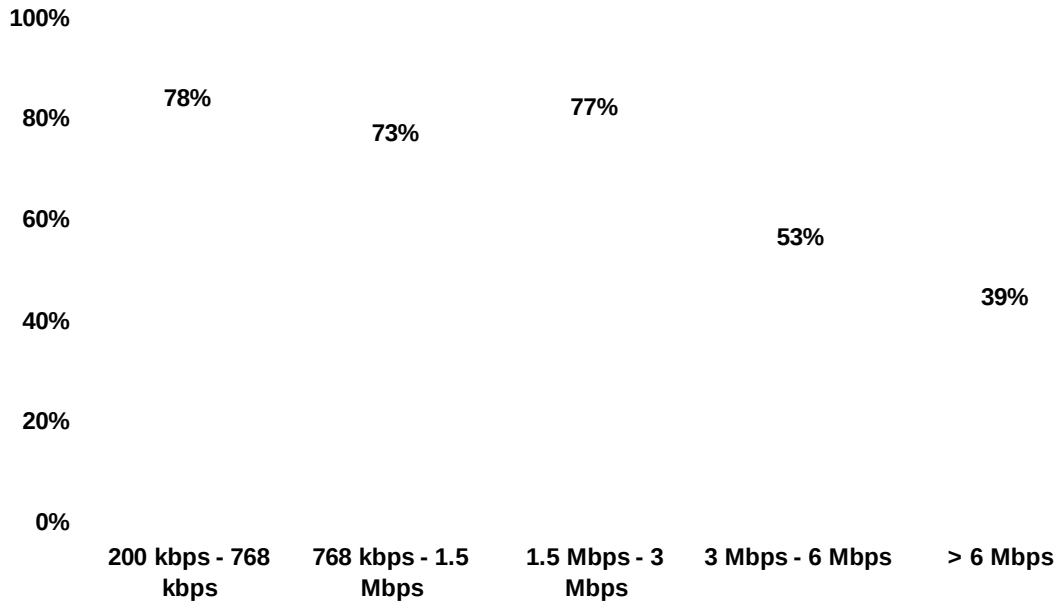
[6] For the purpose of this survey, broadband is defined as throughput of 768 kbps in at least one direction. This was the definition implemented by the FCC in 2008. According the Commission, throughput speeds of between 200 kbps and 768 kbps are classified as "first generation data" and throughputs between 768 kbps and 1.5 Mbps are classified as "basic broadband." This report adopts the FCC's conventions.

[7] Percentages sum to greater than 100% as some respondents utilize more than one technology to serve their customers.

A vast majority (82%) of survey respondents are utilizing fiber fed nodes to extend the reach of DSL. Forty-six percent indicated that the average distance from the digital loop carrier (DLC) to the end user was between 15 and 18 thousand feet (kft), 24% between 9 and 15 kft, 22% greater than 18 kft and 8% 9 kft or less.

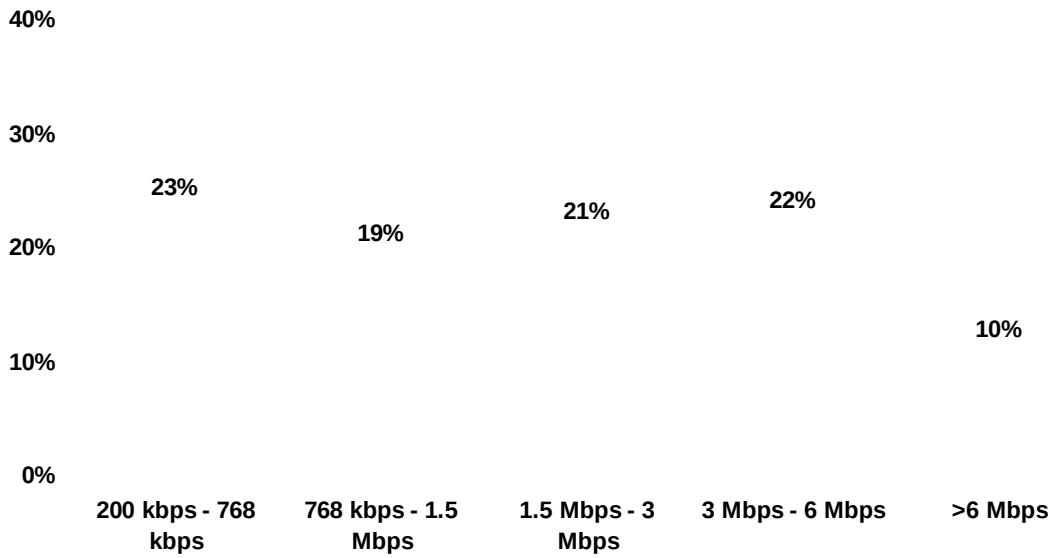
Seventy-eight percent of respondents' customers can subscribe to 200 kbps to 768 kbps service, 73% to 768 kbps to 1.5 megabits per second (Mbps), 77% to 1.5 Mbps to 3 Mbps, 53% to 3 Mbps to 6 Mbps, and 39% to greater than 6 Mbps service. (See Figure 2.)

Fig. 2: AVAILABILITY OF FIRST GENERATION DATA AND BROADBAND SERVICE



Survey results indicate an overall broadband take rate from NTCA member companies of 37%.[8] Broken down by speed tier, on average, 23% of respondents' residential customers who can receive 200 kbps to 768 kbps service subscribe, 19% subscribes to 768 kbps to 1.5 Mbps service, 21% to 1.5 Mbps to 3 Mbps service, 22% to 3 Mbps to 6 Mbps service, and approximately 10% to greater than 6 Mbps service. (See Figure 3.) Typical prices charged range from $34.95 to $44.95 for cable modem service, $39.95 to $44.95 per month for DSL service, $39.95 to $44.95 for wireless broadband service, and $44.95 to $49.95 for fiber service.

Fig. 3: RESIDENTIAL FIRST GENERATION DATA AND BROADBAND TAKE RATES
(Service taken from survey respondents only)



Forty-two percent of survey respondents indicated they offer their customers so-called "naked DSL"—DSL service without a voice component. Take rates for naked DSL service are extremely low, with 56% percent of respondents offering naked DSL reporting take rates of 1% or less.

Half of all respondents estimate that they could bring all of their customers currently receiving service between 200 and 768 kbps up to at least 768 kbps for $1 million or less.

[8] Keep in mind that the take rates provided here are for customers taking service from NTCA member companies only. Actual rural broadband subscription rates are likely significantly higher, as survey respondents are joined by a variety of competitors in the provision of broadband services within their service area.

An additional 24% could do so for between $1 and $5 million, 11% at a cost of between $5 and $10 million, 8% between $10 and $50 million, and 8% estimate the total cost would exceed $50 million.

Internet Backbone

The typical respondent is 103 miles from their primary Internet connection. Eighty-five percent of those respondents who have recently switched Internet backbone access providers did so for price reasons, while 23% switched due to quality of service concerns and 46% for other reasons, such as reducing transport costs or obtaining diverse routing.[9] Seventy-two percent of respondents indicated they are generally satisfied with their current backbone access provider, while 20% are generally dissatisfied.

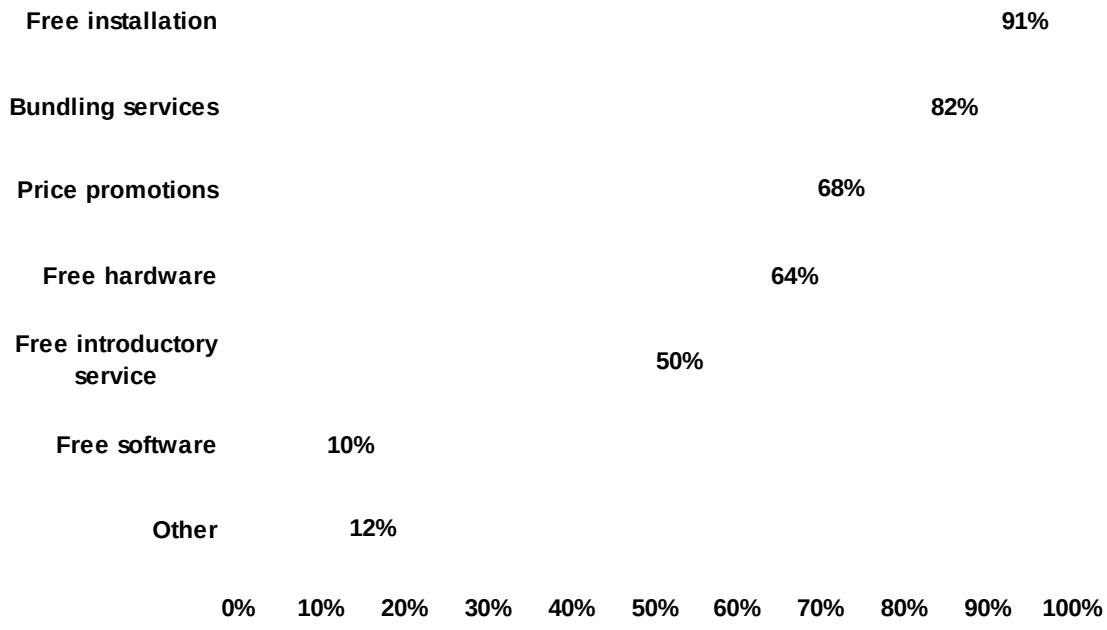
Competition/Marketing

Competition in broadband is becoming more prevalent and more varied: 89% of survey respondents indicated that they face competition from at least one other service provider in some portion of their service area. The typical respondent competes with one national ISP, two wireless Internet service providers (WISPs) and one cable company. Other competitors mentioned include electric utilities, local ISPs and neighboring cooperatives. Fifty-three percent of those respondents facing competition indicated that their competitors were serving only the cities and towns in their service areas, while 47% said that competitors were serving customers throughout their service area.

[9] Totals exceed 100% as respondents were allowed to select more than one reason for switching providers.

Rural ILECs are taking numerous steps in the marketing arena to increase broadband take rates. Ninety-one percent are offering free installation, 82% are bundling services, 68% are offering price promotions, 64% are offering free hardware, 50% offer free service for an introductory time period (such as 30 days), 10% offer free software and 12% are offering other promotions, such as payment options, direct mail marketing, or Internet training.[10] (See Figure 4.) Eighty-one percent of respondents find it difficult to compete with price promotions offered by competitors, while 52% struggle to match competitors' service bundling. Overall, 37% rate their company's marketing efforts as very successful, while 56% rate them as moderately successful.

Fig. 4: BROADBAND MARKETING PROMOTIONS



Fiber Deployment

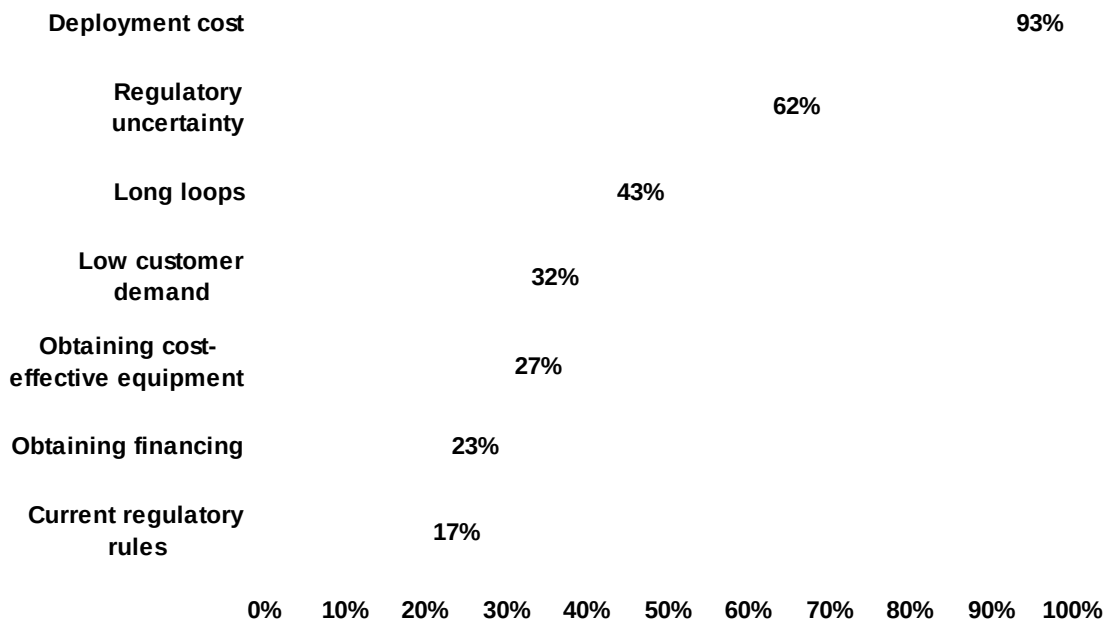
Survey respondents described their companies' plans to deploy fiber to the curb (FTTC) and fiber to the home (FTTH) to their customers. Seventy-three percent of those survey respondents with a fiber deployment strategy expect to offer fiber to the node to more than 75% of their customers by the end of 2011. Twenty-two percent of respondents expect to be able to provide fiber to the curb (FTTC) to at least half of their customers by

[10] Totals exceed 100% as respondents' companies may be offering more than one marketing promotion.

year-end 2011 (up from 11% last year); 55% expect to be able to offer fiber to the home (FTTH) to the same percentage (up from 26%.)

Ninety-three percent of survey respondents identified the cost of fiber deployment as a significant barrier to widespread deployment. Regulatory uncertainty was the number two barrier (62%), followed by long loops (43%), low customer demand (32%) and obtaining cost-effective equipment (27%).[11] (See Figure 5.)

Fig. 5: BARRIERS TO BROADBAND DEPLOYMENT



VoIP

Ten percent of survey respondents currently offer voice over Internet protocol (VoIP) service to their customers, up from 6% one year ago. Fifty-four percent of respondents have plans to offer VoIP service in the foreseeable future, up from 44%. Fifty-four percent of respondents perceive VoIP to pose a significant threat to their current operations (up from 31% last year), while 29% perceive VoIP as a moderate threat (up from 22%.)

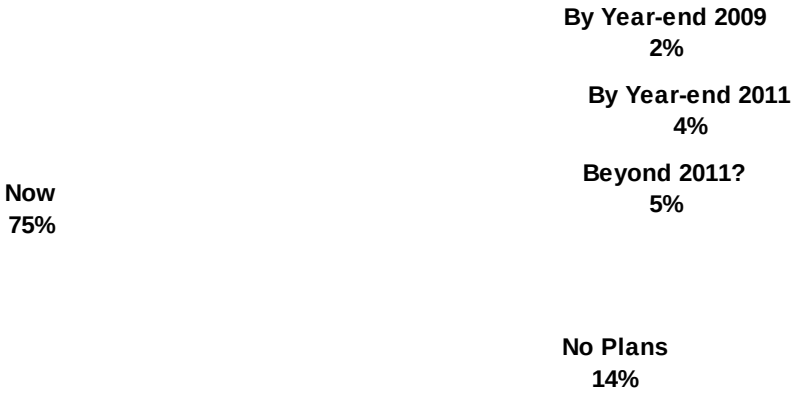
[11] Totals exceed 100% as respondents were allowed to select more than one barrier.

Video

Seventy-five percent of survey respondents offer video service to their customers (up from 68% last year.) Ninety-three percent of those offer video under a cable franchise, while none offer video as an Open Video System (OVS) pursuant to Part 76, Subpart S of the Telecommunications Act of 1996.

Of those respondents not currently offering video, 10% (2% of all respondents) plan to do so by year-end 2009, 15% (4% of all respondents) expect to do so by year-end 2011, and 20% (5% of all respondents) sometime beyond 2011. The remaining 55% of those not currently offering video (14% of all respondents) currently have no plans to offer video service. (See Figure 6.) More than nine out of ten (92%) of those planning to offer video in the future intend to offer IPTV service.

Fig. 6: OFFERING VIDEO SERVICE?



Miscellaneous

Survey respondents were asked what specific obstacles they have encountered in their efforts to deploy fiber to their customers, and how conditions would need to change to allow them to successfully overcome those obstacles. Their responses are presented in Appendix A of this report.

CONCLUSIONS

NTCA member companies continue to deploy fiber at an impressive pace. Nearly three-quarters of survey respondents with a fiber deployment strategy intend to offer fiber to the node to more than 75% of their customers, and 55% plan to offer fiber to the home to more than half their customers in that same time frame. This speaks well of these companies' dedication in providing state-of-the-art services to their service areas, particularly in light of the obstacles that must be overcome in deploying fiber in rural areas, namely distance, terrain and low customer density.

Survey respondents are increasing their deployment of broadband at the upper throughput levels. NTCA member companies continue to increase their deployment of high speed broadband service—53% of respondents' customers can now receive broadband service of between 3 and 6 Mbps, compared to 46% last year, and 39% can receive service in excess of 6 Mbps, compared to 25% a year ago. These gains are due in large part to the previously-noted growth in fiber deployment. As a result, survey respondents are seeing take rates in the higher speed tiers growing, as well.

Cost remains the biggest obstacle to NTCA member companies in the widespread deployment of fiber in their networks. Throughout the history of this survey, the cost of fiber deployment has been the number one obstacle facing respondents. This year is no exception—93% of survey respondents cited deployment cost as a significant impediment. This cost is exacerbated in rural areas by the barriers cited above. The continuing availability of reasonably-priced financing will be critical in allowing rural providers to continue to bring fiber, and the myriad services fiber optic cable facilitates, to their customers.

Growth in video deployment continues. Seventy-five percent of survey respondents now have a video offering, up from 68% a year ago, and an additional 11% intend to do so at some point in the future. If these providers are to be able to bring comparable video services to rural America, it will be critical that they are assured of fair treatment in their negotiations to obtain programming content.

APPENDIX A

Q: What specific obstacles have you encountered in your efforts to deploy fiber to your customers, and how would conditions need to change to allow you to successfully overcome those obstacles?

Obtaining financing in this economic downturn and changing regulations.

The obstacle is building a network that would be financially satisfying to the customer and the company.

We are deploying fiber to the home as fast as we can. The biggest problem we have is some of our customers have NO power to the ONT's.

Unreliable equipment

The cost and personal expense is expensive and will need to be done over a number of years.

We have undertaken a FTTH project to cover a radius of anything within three miles of our central office. We need more regulatory certainty that there will be cost recovery before we can extend our FTTH to our more rural areas.

Distance and cost of equipment.

Minor right-of-way issues

Sustainable revenue streams

Cuts in rates by the [state commission]

1. Cost of deployment/low density area 2. Reliance upon support mechanisms for ROI during times of regulatory uncertainty. 3. Cost of obtaining and purchasing video content. 4. No economies of scale to be realized in exchange of 450 subscribers. 5. Cable and satellite competition.

USF for rural broadband would help

178 miles to […] (where main backbone connection is), middle mile facilities are closer, yet still pricey due to population and per capita income of our customer base. Customer base is not currently requesting more speed, yet continues to maintain price is high. High price is due to having to pay settlements (of course, we do get reimbursed), our Internet wholesaler, and then adding in bandwidth costs we tend to make a little money but

greater expenses would not assist us in making things cheaper or increasing our profit margins. Closest middle mile facility is 16 miles away and requires a river bore. Getting to middle mile facilities is currently being negotiated and explored further, along with fiber to the home within the city of […].

Cost, customer density—cost per loop

Fiber to the home is very expensive to deploy (avg. cost of $6,000 per customer). We need regulatory certainty so that we are assured we can recover this investment. We need less expensive costs for fiber deployment.

Adequate and timely funding; national program for broadband USF

Equipment manufacturers unable to provide working equipment in the field.

Power outages and battery back up. Need to create a longer battery back-up solution during power outages.

We are among the first in our state to adopt fiber to the home technology. We have gone through five revisions to remain current and provide new services. We hope things have started to stabilize. The current regulatory climate is very uncertain. We need some assurance we will be able to recover our investment. We cannot do this when we are forced to let others use our broadband pipes without any form of compensation. The greatest example of this is being forced to let VoIP providers use our broadband facilities to provide services in direct competition with us. We make all the investment, they invest nothing, and they use our facilities for free. This makes a very poor business case.

Existing construction, older houses require an electrician to put in an AC outlet. Coordination of construction, doing drops and getting inside house to install battery and CAT 5 for DSL, education on FTTH as to why and the benefits and replacing battery in the future…still in the early stages of FTTH, may have a longer list next year.

Environmental—survey and treatment for American Burying Beetle and the Western Prairie Fringed Orchid.

Need better equipment.

High installation cost per subscriber with regulatory uncertainty. It's impossible to keep the DSL price low and affordable without federal support.

Cost is the main obstacle. We would have to rebuild most of our service area.

Cost is our primary obstacle. Grant funds or some other type of help in funding the project would be necessary for us to implement a widespread fiber deployment.

Return on investment. More demand from customers. Rural area, more customers per route mile.

As we move out from towns, much greater loop distances for much fewer customers.

Current deployment—access to customer premises, product issues—standards on equipment needed. Future deployment—cost of deploying to all rural areas/remote areas—universal service for broadband?

Need cost reimbursement mechanism to provide a business case for deployment

Obtaining financing in this economic downturn, and changing regulations.

Need to know that money will be there, such as USF

Cost is an obstacle. Cost recovery mechanisms to overcome this obstacle

Cost

Sustainable/predictable settlements in the regulated arena as access revenue declines. We can't invest if there is no return in sight!

Cost is the largest obstacle. Now that we have 40% of our customers on fiber, we will look closely at ways to cut costs on staking, engineering and cutover.

Time

Broadband support

Finalize USF reform so a company can know what to expect for its revenue stream.

Rocky terrain is very expensive to navigate.

ROI

Return on investment

We have constructed by approx. 7000 subs and have approximately 2000 customers working on FTTP. Being an early adopter we encountered interoperability issues but have resolved them and everything is working fine now.

Cost of implementing versus the profit made from the project.

High cost to deploy

Cost of deployment per customer. Need guaranteed cost recovery.

NTCA
NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION
The Voice of Rural Telecommunications
www.ntca.org

March 16, 2009

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W., TW-A325
Washington, D.C. 20554

***Ex Parte* Notice**

In the Matter of Rural Health Care Support Mechanism; WC Docket No. 02-60

Dear Ms. Dortch:

The National Telecommunications Cooperative Association (NTCA) files this letter in support of expanding and making permanent the Rural Health Care Pilot Program (RHCPP). NTCA agrees with comments filed January 27, 2009 by the Telecommunications Industry Association (TIA) that the Federal Communications Commission (FCC or Commission) should immediately raise the current cap on funding available to RHCPP participants. NTCA also agrees with TIA that the FCC should adopt the RHCPP as a permanent program, and the Commission should use the current docket of WC 02-60 as the vehicle to consider and allow the RHCPP to achieve permanent status.[1]

1. Background

On November 19, 2007, the Commission selected 69 public and non-profit health care participants for the RHCPP with approximately $139 million of funding each year for 3 years.[2] This amount is well below the $400 million annual Rural Health Care (RHC) support mechanism within the Universal Service Fund (USF).[3] The RHCPP was established by the Commission under Section 254(h)(2)(A) of the Communications Act of 1934, as amended, to advance telehealth and telemedicine among rural communities by ensuring that rural health care providers pay no more than their urban counterparts for telecommunications needs to provide health care services.[4] The RHC funding years run from June 30 to July 1; hence Funding Year 2007 (Year One) began July 1, 2007, and ended June 30, 2008, and Funding Year 2009 (Year Three) ends June 30, 2010.[5]

1 Telecommunications Industry Association (TIA) Ex Parte Filing, WC Docket No. 02-60 (filed Jan. 27, 2009), p. 1.
2 *In the Matter of Rural Health Care Support Mechanism*, WC Docket No. 02-60, FCC 07-198, Order (rel. Nov. 19, 2007) (Order).
3 Order, ¶ 23.
4 *Id.*, ¶8.
5 *Id.*, ¶ 33, n. 88; 47 C.F.R. §54.623.

The RHCPP participants, as directed by the Commission in the November 19 Order, filed their first set of quarterly reports for the period ending December 31, 2008. A review of several quarterly reports reveals that RHCPP participants have identified the health care providers who will participate in the proposals.[6] Participants have either begun or completed the competitive bidding process necessary to select vendors who will help the rural health care providers create, deploy, maintain a broadband infrastructure or provide services over the infrastructure.[7] Other RHCPP participants reported that they have not incurred any expenses attributable to the RHCPP funds for various reasons.[8] Some asserted that they are still awaiting approval by the Universal Service Administrative Company (USAC) of the RHCPP participant's sustainability plans.[9] Some participants noted difficulty in reaching some health care providers due to the 15% ownership stake requirement of the RHCPP.[10] The next set of reports is due April 30, 2009.

2. Discussion

The FCC should adopt the RHCPP as a permanent program. The Commission will have ample data by the end of 2009 to judge the efficiency and benefits of the participants' proposals. This data base will aid the Commission in determining whether to make the RHCPP a permanent program. In the midst of the Commission's focus on many significant rural issues such as the DTV transition, intercarrier compensation, universal service fund reform, the USAC OIG audits, and expiration of the separations freeze, the Commission should not forget to put consideration of the RHCPP as a permanent program on its project calendar for 2009. Much of the funding, if not all remaining funding, will expire July 1, 2010, the end of Funding Year 2009.

The RHCPP offers great benefits to the participants' rural health care providers, their patients and their communities. NTCA rural telco members live in the communities being served by the RHCPP, serve on the board of directors for rural hospitals, use the participants' health care facilities and have offered their assistance to the participants in obtaining the RHCPP grants and providing service as vendors. One NTCA member, for example, organized the efforts for the entire RHCPP grant and helped the participant work through every detail the FCC wanted in the proposal to connect rural hospitals together with a fiber network. The Commission accepted the proposal, and the rural health care network is now in the bidding process. NTCA agrees with TIA that the RHCPP has bolstered rural investment and promoted rural health care.[11]

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6 *See, e.g.*, Bacon County Health Services, Inc., quarterly report filed Jan. 30, 2009, p. 2-4; Rural Nebraska Healthcare Network, quarterly report filed Jan. 28, 2009, p. 2; West Virginia Telehealth Alliance quarterly report filed Jan. 30, 2009, p. 1; Indiana Telehealth Network quarterly report filed Jan. 30, 2009, pp. 1-5; Utah Telehealth Network quarterly report filed Jan. 30, 2009, p. 2; University Health Systems if Eastern Carolina, quarterly report filed Jan. 30, 2009, p. 2; and Wyoming Network for Telehealth, quarterly report filed Jan. 30, 2009, p. 2.
7 *See, e.g.*, Bacon County, p. 5; .Rural Nebraska Healthcare Network, p. 4; West Virginia Telehealth Alliance, p. 2; Iowa Health Systems quarterly report filed Jan. 30, 2009, p. 1; Wyoming Network, p. 1.
8 *See, e.g.*, Rural Nebraska Healthcare Network, p. 5.; West Virginia Telehealth Alliance, p. 2; and Indiana Telehealth Network, p. 7.
9 *See, e.g.*, Rural Nebraska Healthcare Network, p. 6; Bacon County, p. 4; West Virginia Telehealth Alliance, p. 4;
10 *See, e.g.*, Bacon County, p. 1; and Utah Telehealth Network, p. 4.
11 TIA Ex Parte Filing, p. 4 (filed Jan. 27, 2009), WC Docket No. 02-60.

The Commission should use the current docket of WC 02-60 as the vehicle to consider and allow the RHCPP to achieve permanent status. This docket already serves as the repository for the RHCPP quarterly reports and the Commission's record supporting its decision to implement the RHCPP. The docket also contains an extensive history on the development of the USF Rural Health Care funding mechanism and the RHCPP.

The Commission should immediately raise the current cap on funding available to RHCPP participants. As noted in the Order, more entities applied for funding than was available, and many successful participants did not receive all they sought. Some of the participants may have had to scale back their projects due to limited funds. Right now the program is limited to $139 million, and the Commission should consider raising that cap while still staying below the authorized $400 million. These are funds separate and apart from the 2009 American Recovery and Reinvestment Act (Stimulus Act), which requires all funds to be distributed by September 30, 2010.[12] The rural health care providers will still need a reliable funding source long after the Stimulus funds are spent, so the Commission should keep this funding source open and available beyond 2010.

3. Conclusion

The RHCPP is what rural hospitals need to propel their health care needs by giving them access to cutting edge technology. Rural healthcare in remote rural areas is difficult, from the needs of the patients to the recruitment of physicians and more. Making the RHCPP a permanent program and raising the funding cap may save the rural hospitals and clinics.
For these reasons, the Commission should expand and should make permanent the Rural Health Care Pilot Program.

In accordance with the Commission's rules, this letter is being electronically filed with the Secretary's Office. If you have any questions, please do not hesitate to contact me at 703-351-2016.

Sincerely,
/s/ Daniel Mitchell
Daniel Mitchell
Vice President, Legal and Industry

/s/ Karlen Reed
Karlen Reed
Regulatory Counsel, Legal and Industry

KJR/kr

cc: Michael J. Copps, Acting Chairman
Jonathan S. Adelstein, Commissioner
Robert M. McDowell, Commissioner
Dana R. Shaffer, WCB, Chief

12 The American Recovery and Reinvestment Act of 2009, P.L. No. 111-5 (2009).